



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

MAY 07 1996

Mr. Terry Anderson
Water Quality Branch
Division of Water
Kentucky Department of Environmental Protection
Fort Boone Plaza
18 Reilly Road
Frankfort, Kentucky 40601

Dear Mr. Anderson:

Enclosed for your review is a copy of the draft Environmental Protection Agency (EPA) Region 4 guidance for state/tribal implementation of Tier II of antidegradation. We intend to finalize the guidance by May 31, 1996, so please send your comments to me to allow review/revision prior to that time.

The draft guidance addresses point source considerations and outlines the provisions that should be included in state and tribal implementation procedures for Tier II of antidegradation. It is intended to provide flexibility, in that there is a number of ways to successfully implement this part of the antidegradation policy. One key to that success is for the states/tribes and EPA to agree on certain provisions and operational definitions "up front", in order to avoid confusion or delay during permitting processes.

The guidance is intended for use as a basis of review for state and tribal implementation methods for antidegradation. If you have questions or would prefer to discuss the draft guidance, please call me at 404/347-3555, extension 6633.

Sincerely,

A handwritten signature in cursive script, reading "Fritz Wagener", is positioned above the typed name.

Fritz Wagener, Chief
Water Quality Standards Section

Enclosure

cc: Fred Leutner EPA OST

The federal antidegradation policy (40 CFR Section 131.12(a)(2) states:

Where the quality of the waters exceed levels necessary to support propagation of fish, shellfish, and wildlife, and recreation in and on the water, [Determination: Do Tier II requirements apply?] that quality shall be maintained and protected, unless the State finds, [State decision required] after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, [Public input process] that allowing lower water quality is necessary [Alternatives analysis] to accommodate important economic or social development in the area in which the waters are located [Weighing of socioeconomic issues vs. water quality degradation].

A state/tribal decision, therefore, consists of the following components: (1) Determination of applicability of Tier II process, (2) alternatives analysis, (3) weighing of socio-economic vs. water quality issues, (4) public review/input prior to (5) a final State decision.

Each state or tribe is required to identify the methods for implementation of their antidegradation policy (40 CFR Section 131.12(a)):

The State shall develop and adopt a statewide antidegradation policy and identify the methods for implementing such policy pursuant to this subpart.

States and tribes should address each of the above components when documenting the Tier II implementation process. Also, in documenting these procedures, a state should determine which type of activities are to be regulated under the state antidegradation policy. EPA Region 4 guidance on the development of procedures for these activities is summarized in this document.

Activities Regulated under Antidegradation

The Tier II process is typically triggered when an activity is proposed that may have some effect on existing water quality. A state's implementation procedures should include a list of activities/regulatory actions to which a state antidegradation policy applies, or, at a minimum, a list of examples of these activities. Although states have discretion to apply antidegradation requirements more broadly than minimally required, application of antidegradation requirements to activities that are otherwise unregulated under State, Tribal, and federal water law is not required by the federal water quality standards regulation.

If the state has made a determination that certain categories of activities under the authority of state permitting or related regulatory actions are exempt from the application of Tier II requirements, a rationale for that decision should be included in the state's procedures. (See below discussion of general NPDES permits, for example.)

Determination: Does the proposed degradation require a State decision under Tier II?

A state antidegradation implementation procedure should define how waters will be selected as being applicable to the Tier II process, i.e., how water quality or other data will be assessed in making this determination.

All parameters do not need to be better quality than a state's ambient water quality criteria to trigger a Tier II analysis. The policy is clearly intended to apply to lowering of water quality in water bodies where occasional exceedance of the criteria values occur. Otherwise, there is potential for a large number of waters not to receive antidegradation protection. However, the intent of the federal policy is not to require a Tier II decision in each and every instance that additional pollutants are added to surface waters of a state.

Initially, EPA envisioned that the only appropriate approach to implement Tier II of antidegradation was on an individual parameter approach. This has been expanded and clarified in guidance to individual Regional Offices, states, and in national guidance documents. (See list of references in Water Quality Standards Handbook: Second Edition, EPA-823-B--94-005a, August 1994.) The Water Quality Standards Handbook states, "EPA believes that it is best to apply antidegradation on a parameter-by-parameter basis." However, the Handbook also states, "EPA has accepted approaches that do not use a strict pollutant-by-pollutant basis." It is Region 4's policy that state antidegradation regulations should be applied to cases where significant lowering of water quality is projected to occur, to focus limited state resources where they may result in the greatest environmental protection, and, in a manner consistent with the Section 101 Clean Water Act objective to "maintain the chemical, physical, and biological integrity of the Nation's waters."

The "parameter by parameter" approach addresses degradation of any parameter which exceeds assigned criteria. Under this approach, the Tier II process occurs at the time of the antidegradation review, e.g., during permit issuance. One limitation of this approach is the frequency of sample collection may not support a direct comparison with the duration/exceedance frequency upon which the criteria were developed, e.g., a four day average value, with an allowable exceedance of once every three years. By necessity, states must use some statistical approximation, or "rules of thumb,"

in evaluating ambient water quality to judge whether water quality "exceeds levels necessary to support propagation of fish, shellfish, and wildlife, and recreation in and on the water." Therefore, a state procedure should outline the steps which will be used for this purpose.

There are many situations where little or no data are available to make this determination. This absence of data should not be a limiting factor in the application of a state policy. Data transfer is commonly used in the development of regulatory requirements, e.g., wasteload allocations and total maximum daily loads. This same approach can be easily transferred to the Tier II process. For example, ambient water quality data for similar water bodies within the same watershed or for physically/hydrologically similar segments can be used to judge whether a Tier II decision process applies for a water body under consideration for a new or expanded discharge.

Some generalizations can be made to ensure adequate application of the policy. For example, a new proposed discharger into a relatively undisturbed watershed, for which little data are available, is likely to result in the lowering of water quality and should be subjected to the policy. If necessary, options for additional data collection (by the applicant/discharger or the state) can be included in the implementation procedures, or on a case-by-case basis.

As stated previously, EPA has also accepted approaches that do not use a strict pollutant-by-pollutant basis. Among those approaches is the water body-by-water body (designational) approach. This approach involves either the designation of Tier II water bodies prior to antidegradation review or the selection/listing/designation during the antidegradation review. These are usually based on weighted assessment of chemical, physical and biological data, and other information, e.g., unique ecological or scenic attributes.

It is very unlikely that a state's aquatic database will be sufficient to allow a valid assessment of all of a state's water bodies to determine which of these water bodies should be subjected to the Tier II process. Therefore, if a state wishes to use a designational Tier II approach, it should also include in the antidegradation procedures the process that will be used to add to that listing of Tier II water bodies. Due to the expected large percentage of waters that will probably not be initially designated as Tier II waters, substantial EPA review of State implementation will be required to ensure appropriate application of the policy for these cases.

For point sources, it is generally accepted that a new or increased volume of discharge will result in the lowering of water quality for a Tier II water body. However, changes in the chemical matrix in industrial wastewater (in either a

direct or indirect wastewater discharge) due to process/production changes can also result in degradation. The state procedures should outline the criteria that will be used to make these judgements during the NPDES permit issuance/reissuance process relative to both of these possible circumstances (and others, if necessary to provide clarity in the procedures).

Is the proposed degradation significant?

As discussed previously, not all degradation is sufficiently significant to require consideration under a State antidegradation policy. EPA published guidance based on this approach to Tier II, i.e., including a criteria for a level of insignificant degradation, in the Final Water Quality Guidance for the Great Lakes System (60 FR 15366) regarding implementation of Tier II requirements for bioaccumulative chemicals of concern (BCCs). Also, the proposed rulemaking for the Great Lakes Water Quality Guidance (58 FR 20802) applied this approach to non-BCC parameters.

There are a number of alternatives that a state could use to define a level of insignificant or "de minimis" degradation. These approaches usually require an analysis conducted on a parameter-by-parameter basis. These alternatives include establishing a criterion or operational definition of "insignificant degradation" based on a certain percent of remaining loading capacity, percent of lowering of water quality to the criteria levels, a defined lowering of the concentration of certain parameters, e.g., D. O., type of permitting action, e.g., general NPDES permit, or other considerations. The draft rulemaking for the Great Lakes Water Quality Guidance proposed the following definition of de minimis degradation for non-BCCs:

"The lowering of water quality by a pollutant may be considered de minimis if it satisfies all the following criteria:

The lowering of water quality uses less than 10 percent of the total assimilative capacity; and

... at least 10 percent of the total assimilative capacity remains unused after the lowering of water quality."

If, after appropriate application of such an alternative, the degradation is not significant, the Tier II decision process is complete without further analysis.

Use of too high of a threshold in a determination of de minimis degradation may unduly restrict the number of proposed activities that are subject to a full antidegradation review. It also may not prevent cumulative water quality degradation on a water body (or even a watershed) scale.

An alternate option, which may require more state resources in the long term, is to apply the antidegradation policy to all actions of a certain category, e.g., all new and all expanded point source discharges, regardless of the significance of the proposed degradation. Either of these approaches, when applied properly, can be equally effective and provide equal levels of environmental protection.

Necessary Lowering of Water Quality

The intent of this part of the Tier II policy is to require an analysis of pollution control/pollution prevention alternatives. When completed appropriately, this process should allow evaluation by the state of all feasible alternatives to allowing the proposed degradation, and to allow selection by the state of the least degrading reasonable alternative for implementation.

Alternatives to be considered include: No discharge systems; connection to existing wastewater treatment facilities; alternative discharge points; and other treatment options. It may be appropriate to include in state implementation procedures two different sets of alternatives, i.e., one for domestic wastewater systems and one for non-domestic (industrial) systems.

Identification of Important Social or Economic Activities in the Area in Which the Waters are Located

Examples of factors to be considered in making a determination include:

- o Employment (increasing, maintaining, or avoiding a reduction in employment)
- o Increased production
- o Improved community tax base
- o Housing
- o Correction of an environmental or public health problem.

At least one state (Florida) has chosen to use a decision process previously adopted and defined in State regulation as the basis for a determination that an activity accommodates important economic or social development. (The language adopted by Florida requires that such activities be shown to be "clearly in the public interest.")

Other provisions to be included in a state's methodology

A state's procedures should also include (1) a general description of the administrative process for permit issuance, modification, or denial based on antidegradation Tier II provisions, (2) specify the entity who is responsible for submitting information regarding alternatives, and socio-economic considerations, (3) contain information on how a proposed decision will be announced in a public notice

(including example language of a proposed determination referencing the state antidegradation policy), (4) specify the role of the state environmental agency in the review, (5) specify the entity who will make the final determination, and (6) describe the process for documenting the final decision, e.g., in an amendment to the Fact Sheet at the time of final permit determination, to allow or deny the activity associated with the proposed lowering of water quality.

Summary

In summary, it is recommended that states and tribes address each of the the components discussed above when documenting the Tier II implementation process:

- (1) Activities regulated under Tier II;
- (2) Determination of applicability of Tier II process;
- (3) Alternatives analysis,
- (4) Weighing of socio-economic vs. water quality issues,
- (5) Public review/input,
- (6) Documentation of a final State decision.

Documentation of these processes should result in the effective use of state and federal resources in maintaining the integrity of Region 4 waters.